

CLAIMS

1. A light emitting device comprising:

a first electrode,

a laminated body including a layer containing a light
5 emitting substance in contact with the first electrode,

a layer having an acceptor level in contact with the
laminated body,

a layer having a donor level in contact with the layer
having the acceptor level, and

10 a second electrode in contact with the layer having the
donor level.

2. The light emitting device according to claim 1,

wherein the layer having the donor level includes one of
15 tris(8-quinolinolato)aluminum (abbreviation: Alq₃),
bathophenanthroline (abbreviation: BPhen) and bathocuproin
(abbreviation: BCP).

3. A light emitting device comprising:

20 a first electrode,

a first layer having a donor level in contact with the
first electrode,

a laminated body including a layer containing a light
emitting substance in contact with the first layer having the
25 donor level,

a layer having an acceptor level in contact with the laminated body,

a second layer having a donor level in contact with the layer having the acceptor level, and

5 a second electrode in contact with the layer having the donor level.

4. A light emitting device comprising:

a first electrode,

10 a first layer having an acceptor level in contact with the first electrode,

a first layer having a donor level in contact with the first layer having the acceptor level,

15 a laminated body including a layer containing a light emitting substance in contact with the first layer having the donor level,

a second layer having an acceptor level in contact with the laminated body,

20 a second layer having a donor level in contact with the second layer having the acceptor level, and

a second electrode in contact with the second layer having the donor level.

25 5. The light emitting device according to claim 3 or 4, wherein at least one of the first and second layers having

the donor level includes one of tris(8-quinolinolato)aluminum (abbreviation: Alq₃), bathophenanthroline (abbreviation: BPhen) and bathocuproin (abbreviation: BCP).

5 6. A light emitting device comprising:

a first electrode,

a laminated body including a layer containing a light emitting substance in contact with the first electrode,

a first layer containing a first substance of which a hole
10 mobility is higher than an electron mobility and a second substance that can accept an electron from the first substance in contact with the laminated body,

a second layer containing a third substance of which an electron mobility is higher than a hole mobility and a forth
15 substance that can donate an electron to the third substance in contact with the first layer, and

a second electrode in contact with the second layer.

7. The light emitting device according to claim 6,

20 wherein the third substance is one of tris(8-quinolinolato)aluminum (abbreviation: Alq₃), bathophenanthroline (abbreviation: BPhen) and bathocuproin (abbreviation: BCP).

25 8. A light emitting device comprising:

a first electrode,

a first layer containing a first substance of which an electron mobility is higher than a hole mobility and a second substance that can donate an electron to the first substance
5 in contact with the first electrode,

a laminated body including a layer containing a light emitting substance in contact with the first layer,

a second layer containing a third substance of which a hole mobility is higher than an electron mobility and a fourth
10 substance that can accept an electron from the third substance in contact with the laminated body,

a third layer containing a fifth substance of which an electron mobility is higher than a hole mobility and a sixth substance that can donate an electron to the fifth substance
15 in contact with the second layer, and

a second electrode in contact with the third layer.

9. The light emitting device according to claim 8,

wherein at least one of the first and fifth substances
20 is one of tris(8-quinolinolato)aluminum (abbreviation: Alq₃), bathophenanthroline (abbreviation: BPhen) and bathocuproin (abbreviation: BCP).

10. A light emitting device comprising:

25 a first electrode,

a first layer containing a first substance of which a hole mobility is higher than an electron mobility and a second substance that can accept an electron from the first substance in contact with the first electrode,

5 a second layer containing a third substance of which an electron mobility is higher than a hole mobility and a fourth substance that can donate an electron to the third substance in contact with the first layer,

a laminated body including a layer containing a light
10 emitting substance in contact with the second layer,

a third layer containing a fifth substance of which a hole mobility is higher than an electron mobility and a sixth substance that can accept an electron from the fifth substance in contact with the laminated body,

15 a fourth layer containing a seventh substance of which an electron mobility is higher than a hole mobility and an eighth substance that can donate an electron to the seventh substance in contact with the third layer, and

a second electrode in contact with the fourth layer.

20

11. The light emitting device according to claim 8,

wherein at least one of the third and seventh substances is one of tris(8-quinolinolato)aluminum (abbreviation: Alq₃), bathophenanthroline (abbreviation: BPhen) and bathocuproin
25 (abbreviation: BCP).

12. The light emitting device according to any one of claims 1, 3, 4, 6, 8 and 10,

wherein the laminated body has a single layer structure.

5

13. The light emitting device according to claim 1 or 3, wherein when a potential of the second electrode is set higher than a potential of the first electrode, a hole generated in the layer having the acceptor level is injected in the
10 laminated body.

14. The light emitting device according to claim 4, wherein when a potential of the second electrode is set higher than a potential of the first electrode, a hole generated
15 in the second layer having the acceptor level is injected in the laminated body.

15. The light emitting device according to claim 6, wherein when a potential of the second electrode is set
20 higher than a potential of the first electrode, a hole generated in the first layer is injected in the laminated body.

16. The light emitting device according to claim 8, wherein when a potential of the second electrode is set
25 higher than a potential of the first electrode, a hole generated

in the second layer is injected in the laminated body.

17. The light emitting device according to claim 10,
wherein when a potential of the second electrode is set
5 higher than a potential of the first electrode, a hole generated
in the third layer is injected in the laminated body.